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THE PLANT DISEASE REPORTER

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BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

Vol. IX June 15, 1925 Number 1

FROST INJURY TO CEREALS

Cereal pathologists in general are interested in learning more particulars concerning damage to corn and small grains by freezing temperatures during May. It will be recalled that the month was characterized by a number of periods of cold weather, and during certain of these periods, particularly the week ending May 26, freezing temperatures resulted in much damage to crops, especially in the North Central States, Lake Region and Appalachian Mountain District.

The Survey would therefore like to receive whatever information may be available on this subject. Summaries of the replies will be made for use in the Plant Disease Reporter and in other ways. The following particulars are especially desired.

1. The relative susceptibility of the different small grains.

2. The relative susceptibility of the individual varieties of wheat, rye, etc.

3. Differences in the rapidity of recovery of the different cereal varieties.

4. The type of injury-- whether on the culm, head, leaf, etc.

In this connection Dr. G. N. Hoffer mentions in a recent letter that he has observed many wheat fields in Indiana which were rather severely

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damaged, the culms being frozen within an inch of each joint and the most damage occurring in the second internode from the top. The heads were mostly in the boots at the time of freezing.

5. The estimated damage to the various grains.

6. The extent of replanting necessary in the case of corn.

TAKE-ALL (OPHIOBOLUS GRAMINIS) ON WHEAT IN NORTH CAROLINA AND KANSAS

F. A. Wolf has reported that take-all was found in June by the county agent of Daire County, North Carolina, near Mocksville. This is a new location for take-all in the state. Specimens were identified by Dr. Wolf. (A. G. Johnson)

C. O. Johnston states in a letter dated May 28 that a great deal of take-all injury has been observed in central Kansas, in many cases reaching such proportions that it will not be possible to grow wheat on affected fields another year.

WHEAT NEMATODE (TYLENCHUS TRITICI) FOUND IN A NEW COUNTY IN NORTH CAROLINA

A. G. Johnson of the Office of Cereal Investigations states that J. G. Morrison, county agent of Lincoln County, North Carolina, found wheat nematode on four farms in the county, near Alexis, on June 10. He collected specimens which were identified at his office by Dr. Johnson on June 11. The percentage of infection was not high, amounting to perhaps two to five percent of the plants, scattered over the fields.

ALFALFA DISEASES

A specimen of Peronospora trifoliorum (downy mildew) on alfalfa was received from Collaborator W. D. Valleau of Kentucky. The disease was very

general and apparently killing a large number of plants in a field near Danville. (April 11)

Uromyces medicaginis (rust) in Arizona

"Some good specimens of alfalfa rust were collected in Yuma early in April. This disease was rare except in a few isolated places along ditch banks and fence rows."
(Arizona News Letter (Arizona State Com. Agr. & Hort. 3: 7. Apr. 30, 1925)

POWDERY MILDEW OF RED CLOVER IN ILLINOIS DUE TO ERYSIPHE POLYGONI

By the use of a method which he has described in the April number of Phytopathology (An easy method of mounting superficial fungi for study; pp. 245-246), Howard C. Abbott of the University of Illinois has examined something over 3000 leaves of red clover for perithecia of the powdery mildew fungus. A few perithecia were found on carefully selected leaves in the ratio of one leaf per thousand. The fungus was determined as Erysiphe polygoni DC.

OTHER DISEASES OF CLOVERS

Rootrot (Sclerotinia trifoliorum) of crimson clover

A specimen of crimson clover affected with rootrot was received from F. P. McWhorter, collected near Toano in the Norfolk section of Virginia. McWhorter stated that diseased spots where the plants were all dead occurred throughout the entire field. (April 1). J. L. Weimer of the Office of Cotton, Truck, and Forage Crop Disease Investigations made isolations from the material sent and found sclerotia answering the description of Sclerotinia trifoliorum.

Uromyces elegans (probably) on Carolina clover

In the vicinity of Metcalf, Thomas County, Georgia, fifty percent of the plants of Carolina clover were affected severely by a rust. Alfalfa,

vetch, sweet clover, and about a dozen other clovers were not attacked, according to O. C. Boyd. (March 26) Specimens were examined by John Monteith of the Bureau of Plant Industry, who stated that only aecia were present but that the rust was probably Uromyces elegans.

NEMATODE ON BRADLEY GRASS (CYNODON INCOMPLETUS) IN SOUTH AFRICA

Dr. N. A. Cobb makes an interesting report regarding specimens of Bradley grass attacked by Tylenchus tumefaciens, collected in November 1924, which he received from Pretoria, South Africa. He states (March 10):

> "As the pest is very largely one that works above ground, it would seem easy to combat it on lawns by the use of hot water, fire, or appropriate poisonous chemicals. The parasite is closely related to Tylenchus tritici but attacks the host plant in quite a different way."

LATE BLIGHT OF CELERY REPORTED FROM MASSACHUSETTS

Septoria apii Rostr. has appeared both in the seed bed and the field in Amherst. The field infection undoubtedly came from the seed bed on early celery and appears to be rather serious. So far as we have record, this seems to be the earliest appearance of this disease reported in Massachusetts. (Osmun, May 16)

TIPBURN OF LETTUCE

Virginia: A very large amount of tipburn in Newport News and Portsmouth lettuce sections, spring 1925.
The disease apparently worse in sections where a great deal of crab scrap fertilizer was used. The disease appeared after several warm days in the spring. (McWhorter)

Georgia: Very common during April and May, and quite destructive in some gardens and fields. General throughout southern part; on both leaf and head lettuce. (Boyd)

BOTRYTIS CAUSES DAMAGE TO ONIONS IN TIDEWATER SECTION OF VIRGINIA.

F. P. McWhorter of the Norfolk Truck Experiment Station has reported a great deal of rot in onions grown from sets planted on the Eastern Shore of Virginia. The majority of these diseased sets came from the Chicago Section of Illinois. The cause of the rot is evidently a Botrytis of some kind and is being investigated further both in Virginia and in the Chicago onion set district of Illinois.

SCLEROTIUM CEPIVORUM RECURS IN THE NORFOLK SECTION OF VIRGINIA THIS YEAR

The white rot of onions, Solerotium cepivorum Berk. has been reported by F. P. McWhorter from a farm ten miles west of Newport News, Virginia. This is the same general locality in which the disease occurred last year. The rot developed during the month of March on sets of shallots on new land. The sets came from Louisiana and it is possible that the organism was brought in on them.

DOWNY MILDEW OF ONIONS

Georgia: At Pavo (Brooks County) a five acre onion seedbed was completely overrun by downy mildew, Peronospora schleideni Ung., and on February 27 was reported a total loss; plants not fit to ship. (Higgins, April 29)

PEA ROOTROT

J. F. Adams of Delaware reports that rootrot caused by Aphanomyces was found on young vines April 23 but that observations during May indicated that it was much less prevalent than last year. Charles Drechsler in a trip through some of the pea growing sections of Maryland also found that the comparatively dry spring weather had been unfavorable for the development

of Aphanomyces and that very little of it could be found, therefore, the pea crop so far as this particular disease is concerned should be good. In commenting on the crop for Delaware, J. F. Adams writes:

> "Early prospects of crop very favorable until May when aphis and drouth became disturbing factors. Many fields on light soil were severely scorched by hot burning wind May 23. Harvesting in Sussex County started May 28, less than half crop predicted. In Kent County, on heavier soil, better harvest predicted. Foliage and root diseases much less than usual."

Rootrots of peas, the causesof which were not ascertained were said to be abundant also in parts of the Norfolk Section this spring and a Fusarium root rot was reported by O. C. Boyd as causing slight damage in southern Georgia.

CABBAGE DISEASES IN THE TIDEWATER SECTION OF VIRGINIA

Blackleg (Phoma lingam) - A serious form is present on the the spring crop in the Tidewater Section. Diseased plants generally die before forming a head. Typical stem and leaf lesions present. (McWhorter)

Wire stem (Corticium vagum B. & C.) - Wire stem was important in cold frame plantings during the early spring. (McWhorter)

Yellows (Peronospora parasitica) - The cabbage here, especially in wind-blown areas is being yellowed by a field infection of Peronospora parasitica. The peculiar thing about this season's appearance is the fact that it is attacking rather large plants, some of which are beginning to head out. The farmers have mistaken the disease for yellows. It appeared after a period of warm weather followed by six days of cool weather. (McWhorter)

PEPPERY LEAFSPOT OF CAULIFLOWER (BACTERIUM MACULICOLUM McC.)

The two following reports concerning this disease have been received from New York and Virginia.

New York: Seedbeds were inspected on 21 farms in Delaware County. Seven sources of seed were used to plant these beds. Seed from one source evidently was inoculated with Bacterium maculicolum for in each case where this

particular seed was not treated, the leafspot was present. Seemingly it started from a few individual plants and quickly spread to adjoining plants, until an area several feet in diameter was darkened. None of the plants were entirely dead. Where the seed was treated for 20 minutes with mecuric chloride (1-1000) none of the leafspot was found. (Chupp, May 15)

Virginia: During March this leafspot was common in Tidewater, Virginia. Now (May 11) the harvest is in and all indications of the disease have disappeared. It is almost confined to the cold frame period of propagation. There is evidence that infection comes from manure. (McWhorter, May 11)

In this connection it is interesting to note that this disease has been recently found occurring in Denmark. Although known there for a number of years, it was not until 1922 that cultural studies resulted in the isolations and identification of B. maculicolum McC. Cabbage, cauliflower and Brussels sprouts were affected.

DAMPING-OFF OF CAULIFLOWER IN NEW YORK CAUSED BY SEVERAL ORGANISMS

New York: A survey was made of cauliflower seedbeds on 21 farms in the Catskill region of Delaware County. Where no control measures were practiced there was considerable damping-off, there being in a few cases as much as 20%. Where copper-sulfate, copper-carbonate and corrosive sublimate were used there was little or no damping-off. (Chupp, May 15)

PEACH LEAFCURL

Peach leafcurl was reported as being observed in a number of New York counties during the latter part of May. R. A. Jehle, returning from the Eastern Shore of Maryland, reported that there was considerable curl in orchards where the spray was not applied on time. There was probably as much as last year. Very few reports on curl have been received at the Survey Office thus far this season. This does not mean that the disease is not abundant but simply means lack of reports on the part of collabor-

ators and others.

When making observations on leafcurl this season it would be well to keep in mind the recent statement of A. J. Mix (Phytopath. 15: 241-245. April 1925) that, "Infection of peach leaves by overwintering spores of Exoascus deformans may occur not only at the time of opening of the buds but also after the leaves have considerably expanded." He states further that the later infections result in different symptoms in that only small isolated areas of the leaf blade are involved. We have all noted these different types of leafcurl but perhaps have not appreciated their significance. Any observations along this line would be worth while.

PEACH YELLOWS APPARENTLY NOT IN INDIANA

Early literature and Survey reports indicate that at one time peach yellows was widespread in Indiana, however, during recent years no cases of the disease have been found. Concerning the matter M. W. Gardner reports on April 27 as follows:

> "We feel quite confident that peach yellows does not occur in Indiana at the present time. Neither Doctor Jackson nor I have ever seen any cases of that disease and I think we have been in most of the commercial peach orchards. Furthermore the men in the Horticultural Department who know the commercial orchards from one end of the state to the other assure me that there is none of the disease present and that there has not been any for a considerable period of time. They do report, however, that at one time the disease was present in the state. It seems very strange that such a disease could disappear so completely, but nevertheless such seems to be the case."

The Survey is interested in getting more complete information concerning the present known distribution of yellows. Apparently the range of the disease has receded since the earlier work was done on its distribution. Any reports, either positive or negative, from collaborators, especially

in the border states such as New England, New York, Michigan, Indiana, Illinois, Missouri, Arkansas, and North Carolina, will be appreciated.

DAMAGE TO APPLES FROM BLIGHT REPORTED HEAVY FROM KENTUCKY, GEORGIA, AND ILLINOIS

A report by W. D. Valleau from Perry County, Kentucky, states that in one orchard all of the fruit on 200 trees was destroyed, presumably by blight.

Georgia: In spite of the extremely dry weather we are having, blossom blight (fireblight) on apples seems to be unusually bad this year. During the past week we have received half a dozen specimens and requests for information covering the entire northern half of the state. Observations indicate that the plum curculio is carrying the bacteria and infecting the young apples which are now half an inch or more in diameter. (Higgins, April 29)

Illinois: You may be interested in knowing that fireblight in the form of spur blight on apples is causing enormous losses to an otherwise unusually promising crop in southern Illinois. I believe this is the worst we have ever had of this type of blight. It is unusually severe on Grimes which ordinarily is practically free of blight under our conditions. It is also present in a severe form on Wealthy, Transparent, Jonathan and York. It appeared suddenly about April 27, sometime after the fall of the blossoms which was unusually early this season. I would estimate a fifty percent loss in a number of orchards. The remarkable thing about this attack of fireblight was the fact that the season has been very dry throughout southern Illinois, especially during and immediately following the blooming period. Pears were not seriously blighted at this time. The only explanation I can offer is the fact that weather conditions were ideal for insect pollination and since the blight is laregly blossom and spur blight the insects have been largely responsible for the condition. (Anderson, May 12)

In the Weekly News Letter of the Departments of Entomology and Plant Pathology of the New York State College of Agriculture, reports of the beginnings of blight infection were made May 11 and May 25.

APPLE SCAB REPORTS

Apple scab was first noted in New York during the latter half of May.

The following are some of the dates of first observations in different counties as reported in the Weekly News Letter from the New York State College of Agriculture: Ulster County, May 23; Ontario County, May 17 to 23; Dutchess County, May 18; Columbia County, May 17 to 23. Pathologists are asked to make special notes of the dates when apple scab infections began to appear this year and to send them to the Survey for recording. Also, any information on ascospore development and discharge are needed.

Maryland (Eastern Shore): Showing up now on all unsprayed or poorly sprayed trees on leaves and fruits. None noted on twigs as was the case last year. Not so bad as last year. (Jehle, May 29)

North Carolina: Apple scab was first noted this season on the fruits in an apple orchard in Burke and McDowell Counties on June 4 and 5. The disease was just setting in at this time and only an occasionally infected apple was observed. (Fant, June 8)

Illinois: Appeared at Urbana first about May 1, which is somewhat early as compared to other seasons but late as compared to the time of blooming. I have not been able to find scab in southern Illinois and have had no report of it. It will probably be very light there due to the fact that we had, as stated above, very dry weather during and following the blooming period. (Anderson, May 12)

BLACKROT OF APPLE (PHYSALOSPORA MALORUM)

Leaf infection was first observed in the Hudson Valley in New York in Dutchess and Columbia Counties about May 19, (Weekly News Letter N. Y. State College of Agriculture, May 25, 1925). According to R. A. Jehle of Maryland, it was also noted as prevalent in unsprayed or improperly sprayed orchards on the eastern shore of Maryland during the week May 24 to May 30. He observed it as especially abundant in places where the dead wood had not been pruned out.

POWDERY MILDEW OF APPLES REPORTED FROM NEW YORK

Reports of powdery mildew from a number of counties in the Hudson Valley were received about the middle of May, and in Monroe County in western New York it was said to be showing up on apples June 1.

WEATHER INJURY TO APPLES IN ILLINOIS

Illinois: An unusual injury has occurred this year on apples which can be classed as weather injury. We have had nearly two weeks of rather cold weather with high cold winds. As a result many of the apples which were apparently pollinated and started to develop in a normal manner dropped off. Others have turned brown and will soon fall. This condition resembles blight except that the leaves on the spur are not killed and there is no evidence of the blight organism. It also resembles somewhat a bad podicel infection of scab, but scab is not present. (Anderson, May 12)

RASPBERRY MOSAIC, A CORRECTION

In a recent supplement issued by the Plant Disease Survey (Plant Disease Reporter 39: 79, May 1, 1925) the second paragraph of the New York report for raspberry mosaic should be eliminated. This report by W. H. Rankin concerned a so-called "false mosaic" and did not apply to the true raspberry mosaic considered in this section of the summary. Of course, the true mosaic is a decidedly injurious disease in New York State.

AN APPARENT MOSAIC REPORTED ON STRAWBERRIES

New York: Strawberry plants were sent from Columbia County and which showed very characteristic symptoms of mosaic. The plants were much dwarfed and yellow appearing. The leaves had alternating patches of green and yellow, with the green in raised blisters. A letter from Canada announced a similar condition in that country. On the farm in Columbia County where the diseased plants were found, several varieties were grown but only the "Eton"

was affected. Several plants are being set out at the College, and attempts will be made to prove the trouble to be infectious. (Chupp, May 7)

STEMROT OF PEONY IN MARYLAND AND VIRGINIA

Specimens of peony plants received by the Office of Cotton, Truck, and Forage Crop Disease Investigations from Maryland and Virginia during May were found to be affected with a stemrot, the cause of which has not been determined definitely, but in the case of the Virginia material, both Rhizoctonia and Botrytis were associated.

POWDERY MILDEW ON CREPE MYRTLE

Two interesting reports, accompanied by specimens, of powdery mildew on crepe myrtle (Lagerstroemia indica) have been received this year. C. A. Ludwig of South Carolina sent in specimens collected at Charleston on May 27, with the remark that this was the second occurrence that had been brought to his attention this year. The other report was from B. B. Higgins of Georgia, who collected the disease at Griffin, Spaulding County, April 24.

As both specimens showed only conidia, exact determination of the fungus was not possible. Miss Vera K. Charles, to whom they were referred, states that apparently the only powdery mildew reported on crepe myrtle to date is Uncinula australiana McAlp.

An undetermined powdery mildew was reported from Texas in 1924. This is the only other record in the Survey files of the occurrence of such a disease on crepe myrtle in this country.

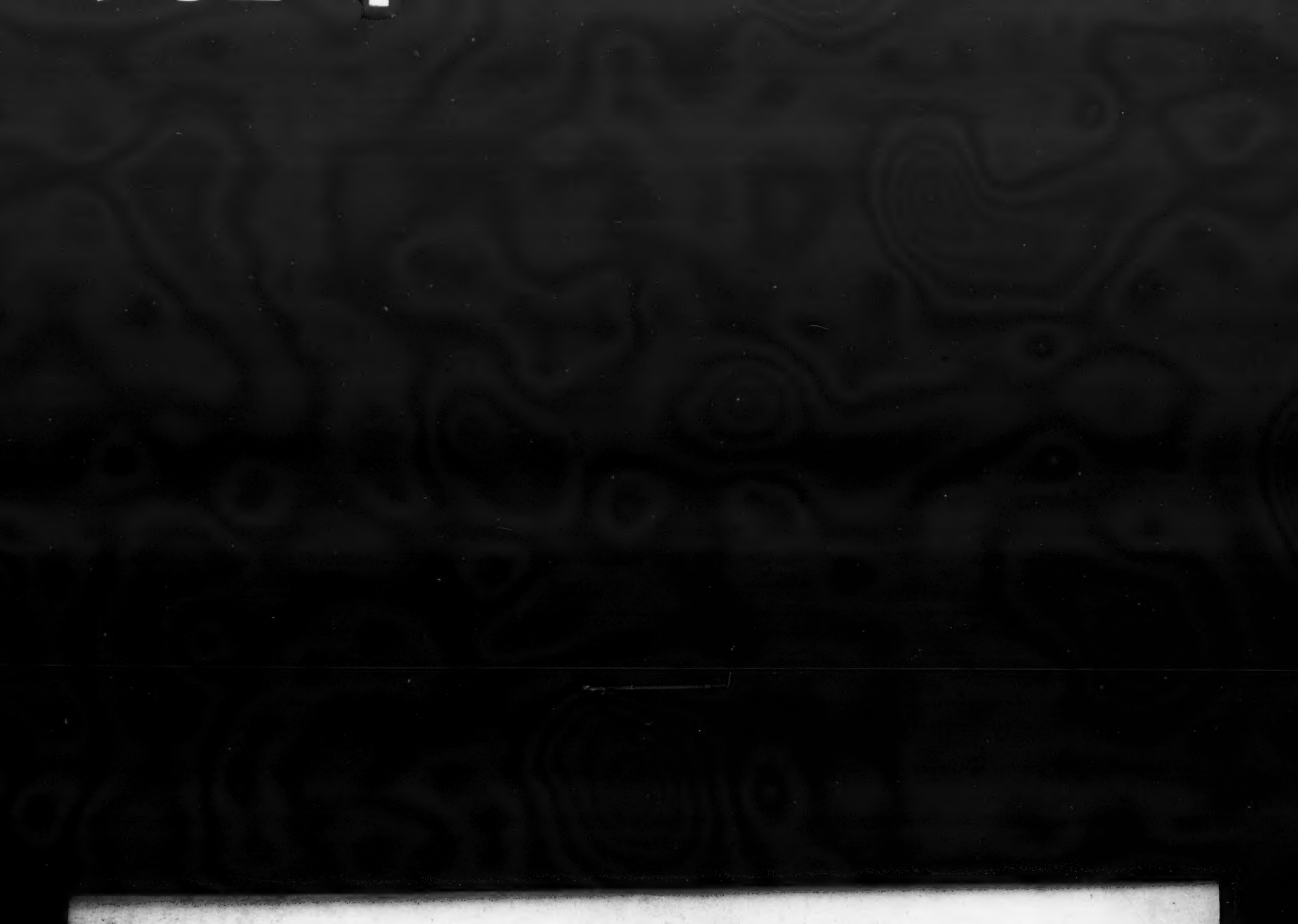
SWEET PEA MOSAIC IN NEW JERSEY

Freeman Weiss of the Bureau of Plant Industry reported that on

January 24 he observed mosaic in a greenhouse at Bridgeton, New Jersey, affecting one block constituting about 10% of one entire house. The infected block was a total loss. No aphids were present at this time though they may have been so earlier. There were no other plants in the house besides sweet peas.

CHESTNUT BLIGHT CONTINUING TO SPREAD IN NORTH CAROLINA

"The chestnut blight disease was noted this season occurring on the host near the latter's lower limit with reference to altitude. Young chestnut trees affected with the disease were found in the foot-hills near Statesville, at an altitude of about 1000 feet." (G. W. Fant, June 8)

PANSY YELLOWS

"Among the many thousand pansy plants in the various beds in front of the Administration Building of the Department of Agriculture this spring, there are several that show a degeneration disease of the mosaic type. The plants are dwarfed, yellowed, and flowers are small and inferior. The worst affected plants seem to be almost completely lacking in chlorophyll while others are only slightly mottled. There seems to be no marked twisting or savoying of leaves but reduction in size and color only. Affected plants have a tendency to occur in groups or spots in the bed. (Haskell, May 1)